

R-49-1-92-8

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN)**

**FINAL
SITE INVESTIGATION WORK PLAN ADDENDUM
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK**

NORTHERN AND CHESAPEAKE DIVISIONS

**Submitted To:
Northern Division
Environmental Branch, Code 1421/DF
Naval Facilities Engineering Command
Building 77-L, U.S. Naval Base
Philadelphia, PA 19112-5094**

**Submitted By:
HALLIBURTON NUS Environmental Corporation
Foster Plaza 7, 661 Andersen Drive
Pittsburgh, PA 15275-1071**

CONTRACT NUMBER N62472-90-D-1298, CTO 0002

APRIL 1992



HALLIBURTON NUS
Environmental Corporation





661 ANDERSEN DRIVE PITTSBURGH, PENNSYLVANIA 15220 (412) 921-7090

R-49-1-92-8

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN)**

**FINAL
SITE INVESTIGATION WORK PLAN ADDENDUM
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK**

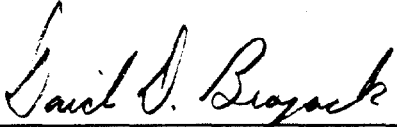
NORTHERN AND CHESAPEAKE DIVISIONS

**Submitted To:
Northern Division
Environmental Branch, Code 1421/DF
Naval Facilities Engineering Command
Building 77-L, U.S. Naval Base
Philadelphia, PA 19112-5094**

**Submitted By:
HALLIBURTON NUS Environmental Corporation
Foster Plaza 7, 661 Andersen Drive
Pittsburgh, PA 15275-1071**

CONTRACT NUMBER N62472-90-D-1298, CTO 0002

APRIL 1992



**DAVID D. BRAYACK, P.E.
PROJECT MANAGER**



for **JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER**

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 INTRODUCTION	1
2.0 BACKGROUND	1
3.0 UPCOMING ACTIVITIES.	6
3.1 On-Site Soil Redeposition.	6
3.2 On-Site Waste Water Disposal	7
3.3 Drum Contents Consolidation and.	7
Off-Site Waste Incineration	
3.4 Empty Drums.	8

TABLES

2-1	2
3-1	9
3-2	10
3-3	11
3-4	12
3-5	14

FIGURES

1-1	5
---------------	---

1.0 INTRODUCTION

This Work Plan addendum is submitted under the terms of the U.S. Navy Contract N62472-90-D-1298, Contract Task Order 0002. The addendum was developed to address the upcoming residue management activities. The site residues were generated during the field activities of the Site Investigation conducted at the Naval Weapons Industrial Reserve Plant in Calverton, New York (NWIRP Calverton). The addendum identifies the on-site handling and treatment activities, and the off-site treatment and disposal procedures for the residue.

2.0 BACKGROUND

During July and August 1991, field activities for the Site Investigation were conducted. These activities included sampling of soils, sediments, ground water and surface water. As a result of these activities, thirty-four (34) drums containing solid and liquid materials were generated and are stored on-site in fifty-five (55) gallon drums. Each drum was uniquely labeled for positive identification of the drummed contents. Furthermore, each drum was wrapped within plastic to isolate it from the environment. The planned activities are summarized as follows.

The contents of fifteen (15) drums will be consolidated into eleven (11) drums, and treated and disposed via off-site incineration (see Table 1). The four (4) emptied drums will be field decontaminated and collected for recycling. The decontamination fluids and associated disposable decontamination equipment will also be consolidated for off-site treatment and disposal. Furthermore, solids from an upcoming water screening activity will be included with these eleven (11) drums for off-site treatment and disposal.

Ten (10) drums containing soils generated during the soil boring activities (see Table 2); nine (9) drums containing water generated during the monitoring well development (see Table 3); and four (4) drums emptied for off-site treatment and disposal, will be collected for recycling. A total of twenty-three (23) empty drums will be recycled by a local drum reconditioning firm.

A summary of the fate of the drums, drummed contents and drum locations is presented on Table 2-1. For a location of the Sites, see Figure 1-1.

TABLE 2-1

**DRUM LOCATIONS
RESIDUE MANAGEMENT
NWIRP, CALVERTON, NEW YORK**

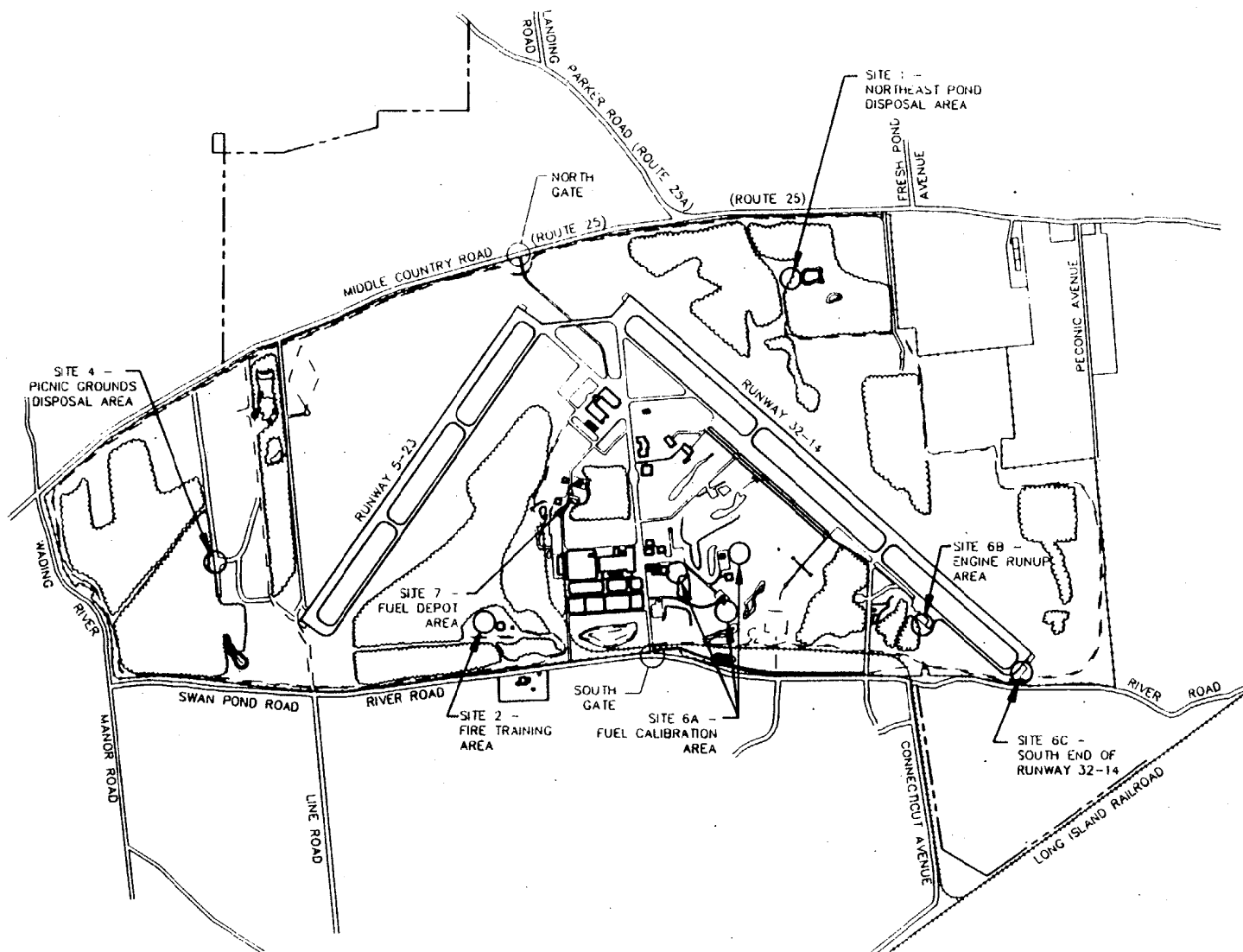
Drum Number	Contents	Volume (gallons)	Contents Fate	Site Location
01	Water	55	Empty/On-Site Treatment	7
02	Water	45	Empty/On-Site Treatment	7
03	Water	55	Empty/On-Site Treatment	7
04	Water	45	Empty/On-Site Treatment	7
05	Water	55	Empty/On-Site Treatment	6A
06	Water	50	Consolidate/ Off-Site Treatment	2
07	Soil	40	Empty/On-Site Redeposition	7
08	Soil	27	Empty/On-Site Redeposition	7
09	Soil	27	Empty/On-Site Redeposition	7
10	Soil	20	Empty/On-Site Redeposition	1
11	Soil	20	Consolidate/ Off-Site Treatment	1
12	Soil	20	Consolidate/ Off-Site Treatment	1
13	Soil	27	Empty/On-Site Redeposition	1
14	Soil	40	Empty/On-Site Redeposition	4

TABLE 2-1 (continued)
DRUM LOCATIONS

Drum Number	Contents	Volume (gallons)	Contents Fate	Site Location
15	Soil	20	Empty/On-Site Redeposition	4
16	Soil	20	Empty/On-Site Redeposition	6A
17	Soil	40	Consolidate/Off-Site Treatment	6A
18	Soil	20	Empty/On-Site Redeposition	6A
19	Soil	40	Empty/On-Site Redeposition	6B and 6C
20	Soil	27	Consolidate/Off-Site Treatment	2
21	Water	20	Consolidate/Off-Site Treatment	2
22	Soil	27	Consolidate/Off-Site Treatment	2
23	Soil	20	Consolidate/Off-Site Treatment	2
24	Soil	40	Consolidate/Off-Site Treatment	2
25	Water	20	Consolidate/Off-Site Treatment	2
26	Soil	20	Consolidate/Off-Site Treatment	2
27	PPE	55	Consolidate/Off-Site Treatment	2

TABLE 2-1 (continued)
DRUM LOCATIONS

Drum Number	Contents	Volume (gallons)	Contents Fate	Site Location
28	Water	55	Empty/On-Site Treatment	2
29	Water	55	Empty/On-Site Treatment	2
30	PPE	55	Consolidate/ Off-Site Treatment	2
31	PPE	55	Consolidate/ Off-Site Treatment	2
32	PPE	55	Consolidate/ Off-Site Treatment	2
33	Water	20	Empty/On-Site Treatment	2
34	Water	15	Empty/On-Site Treatment	2



LOCATION OF SITES
SITE INVESTIGATION
NWIRP, CALVERTON, NEW YORK

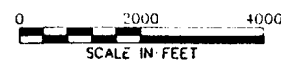


FIGURE 1-1

3.0 UPCOMING ACTIVITIES

This section describes the activities which will be conducted to fulfill this Work Plan addendum. Since additional field and subcontract activities are required under this task, modifications are required to the Work Plan and the Health and Safety Plan. Halliburton NUS Environmental Corporation (HALLIBURTON NUS) has prepared addenda to these documents to address the additional field and subcontract activities. The relevant areas to be considered are as follows:

- spreading ten (10) drums of non-contaminated soils on-site;
- transporting nine (9) drums of contaminated water to the on-site waste water treatment facility;
- screening sizable solids from the contaminated water and consolidating the solids for off-site treatment and disposal;
- consolidating the contaminated contents of fifteen (15) drums into eleven (11) drums for off-site treatment and disposal;
- decontaminating four (4) emptied drums which contained contaminated soils, and consolidating decontamination fluids and associated disposable decontamination equipment for off-site treatment and disposal;
- developing bidding specifications for the off-site treatment and disposal of eleven (11) drums containing contaminated soils, personal protective equipment ("PPE"), decontamination fluids, disposable decontamination equipment, screened solids and water; and
- coordinating the recycling of twenty-three (23) empty drums.

3.1 On-Site Soil Redeposition

The contents of ten (10) drums containing uncontaminated soils (see Table 3-1) will be redeposited near the respective sample locations. These drums are identified as 07, 09, 10, 13, 14, 15, 16, 18, and 19.

The soils contain insignificant amounts of VOAs, SVOAs, and metals. The soil will be redeposited on-site. Table 3-2 presents a general description of the soil redeposition areas. The soils will be spread over a nearby area and will be landscaped to match the local topography. The soils will then be planted with common local seeds and covered with straw. The empty drums will be transported to Site 2 for temporary storage until they are picked up for recycling.

3.2 On-Site Waste Water Disposal

The nine (9) drums containing contaminated water (see Table 3-3) will be transported to the NWIRP Calverton waste water treatment facility. These drums are identified as 01, 02, 03, 04, 05, 28, 29, 33 and 34.

The contaminated water will be passed through a window-size screen mesh sieve to separate coarse particles. Following passage through the sieve, the contaminated water will be discharged to the on-site waste water treatment facility. The screened residue will be combined with the eleven (11) drums of material planned off-site incineration. The empty drums will be transported to Site 2 for temporary storage until they are recycled offsite.

3.3 Drum Contents Consolidation and Off-Site Waste Incineration

The contents of the fifteen (15) drums containing contaminated soil, water and PPE will be consolidated into eleven (11) drums. The fifteen (15) drums are identified as drums 06, 11, 12, 17, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31 and 32 (See Table 3-4). These drums will be transported to Site 2 for consolidation and staging. The four (4) drums emptied drums will be field decontaminated. Table 3-5 presents a summary of the drum consolidation. Decontamination fluids and associated disposable decontamination equipment will also be consolidated with the eleven (11) drums for off-site treatment and disposal. Based upon the limited data available, HALLIBURTON NUS believes that materials which will be consolidated as part of this activity are compatible.

Four (4) drums of the fifteen (15) drums contain used PPE. The PPE is suspected to be contaminated with volatile and semi-volatile organic compounds (VOAs and SVOAs, respectively), and metals. Three (3) drums of the fifteen (15) drums contain contaminated ground water which was generated during monitoring well development. The water is contaminated with VOAs, SVOAs and metals. Lastly, eight (8) drums of the fifteen (15) drums contain contaminated soil generated during the soil boring activities. The soil is contaminated with VOAs, SVOAs, metals and polychlorinated biphenyls.

The contents of the eleven (11) consolidated drums will be treated and disposed at an off-site incineration facility. HALLIBURTON NUS will develop bidding specifications for potential subcontractors to review and provide bids.

The four (4) emptied drums will be decontaminated on site and then collected by a local drum reconditioner.

These four (4) drums will be decontaminated by rinsing with:

1. tap water
2. nitric acid
3. tap water
4. methanol
5. tap water

The drum decontamination fluids will be mixed with the other decontaminated fluids (see Table 3-5).

3.4 Empty Drums

Twenty-three (23) empty drums will be recycled through a separate subcontract. HALLIBURTON NUS will develop bidding specifications for potential subcontractors to review and provide bids. Also, the outside of the containers will be cleaned as appropriate.

TABLE 3-1

**DRUMS CONTAINING SITE INVESTIGATION-GENERATED SOILS
PLANNED FOR ON-SITE REDEPOSITION
NWIRP, CALVERTON, NEW YORK**

Drum Number	Sample Location	Quantity (gallons)	C-VOAs (ppm)	NC-VOAs (ppm)	SVOAs (ppm)	RCRA Metals (ppm)
07	Soil - 24	40	-	-	Ph: 1.45	-
08	Soil - 22	27	-	-	Ph: 0.467 PAH: 4.75	-
09	Soil - 23	27	0.001	-	PAH: 1.65 Ph: 1.94	-
10	Soil - 04	20	0.004	0.002	Ph: 1.3	-
13	Soil - 03	27	0.008	-	PAH: 0.558 Ph: 5.0	+
14	Soil - 10 & 11	40	0.009	0.002	PAH: 0.980 Ph: 7.8	-
15	Soil - 12	20	-	-	Ph: 5.45	-
16	Soil - 15, 17 & 19	20	-	-	Ph: 4.37	-
18	Soil - 18	20	-	-	Ph: 0.705	-
19	Soil - 20 & 21	40	-	-	PAH: 0.678	-

C-VOAs: chlorinated volatile organic compounds, which include: 1,2-dichloroethene, tetrachloroethene, trichloroethene, 1,2-dichloroethane, 1,1,1-trichloroethane, chloroethane, and 1,2-dichlorobenzene.

NC-VOAs: non-chlorinated volatile organic compounds, which include: acetone, benzene, ethylbenzene, 2-methylnaphthalene, naphthalene, toluene, xylene, and benzoic acid.

SVOAs: semi-volatile organic compounds.

PAH: polyaromatic hydrocarbons.

Ph: phthalates.

RCRA: Resource Conservation and Recovery Act.

+: several other non-RCRA regulated, but toxic metals were detected.

-: contaminants were not detected, or not analyzed and believed to be absent.

ppm: parts per million: mg/l for liquids and mg/kg for solids.

TABLE 3-2

GENERAL LOCATION OF SOIL REDEPOSITION AREAS
NWIRP, CALVERTON, NEW YORK

Drum Identification	Soil Boring	Site
07	24	7
08	22	7
09	23	7
10	04	1
13	03	1
14	10 and 11	4
15	12	4
16	15, 17 and 19	6A
18	18	6A
19	20 and 21	6B

TABLE 3-3

**DRUMS CONTAINING SITE INVESTIGATION-GENERATED LIQUIDS
PLANNED FOR ON-SITE WASTE WATER TREATMENT
NWIRP, CALVERTON, NEW YORK**

Drum Number	Sample Location	Quantity (gallons)	C-VOAs (ppm)	NC-VOAs (ppm)	VOAs (ppm)	SVOAs (ppm)	RCRA Metals (ppm)
01	MW 13 & 14	55	-	1.1		Ph: 0.123	Pb: 0.236
02	MW 15 & 16	45	-	4.4		PAH: 0.096	Pb: 0.692
03	MW 18 & 19	55	-	0.45		-	Pb: 0.042
04	MW 17 & 18	45	-	0.37		-	Pb: 0.031
05	MW 7, 8, 9, 10, 11 & 12	55	3.5	11.0		Ph: 0.38	Pb: 1.74
28	Decon Water	55			*	*	*
29	Decon Water	55			*	*	*
33	Decon Water	20			*	*	*
34	Decon Water	15			*	*	*

C-VOAs: chlorinated volatile organic compounds, which include: 1,2-dichloroethene, tetrachloroethene, trichloroethene, 1,2-dichloroethane, 1,1,1-trichloroethane, chloroethane, and 1,2-dichlorobenzene.

NC-VOAs: non-chlorinated volatile organic compounds, which include: acetone, benzene, ethylbenzene, 2-methylnaphthalene, naphthalene, toluene, xylene, and benzoic acid.

VOAs: volatile organic compounds which include C-VOAs and NC-VOAs.

SVOAs: semi-volatile organic compounds.

PAH: polyaromatic hydrocarbons.

Ph: phthalates.

RCRA: Resource Conservation and Recovery Act.

Pb: lead.

*: volatile and semi-volatile organic compounds, and metals are suspected.

-: contaminants were not detected, or not analyzed and believed to be absent.

ppm: parts per million: mg/l for liquids and mg/kg for solids.

Decon: decontamination.

TABLE 3-4

**DRUMS CONTAINING SITE INVESTIGATION-GENERATED MATERIALS
PLANNED FOR OFF-SITE INCINERATION
NWIRP, CALVERTON, NEW YORK**

Drum Number	Sample Location	Quantity (gallons)	C-VOAs (ppm)	NC-VOAs (ppm)	SVOAs (ppm)	RCRA Metals (ppm)
06	MW 01 & 02	50	0.019	0.296	Ph: 0.032 PCBs: 0.008	Pb: 0.058
11	Soil - 01	20	-	2.3	PAH: 179	Cr: 959 Cd: 42 +
12	Soil - 02	20	-	-	Ph: 3.1	Cr: 159 +
17	Soil - 13, 14 & 16	40	7.4	28.5	Ph: 0.630	-
20	Soil - 05	27	0.007	0.29	Ph: 0.98	-
21	MW 3, 4 & 6	20	0.070	0.123	Ph: 0.010	Cd: 0.023 Cr: 0.080 Pb: 0.074
22	Soil - 07	27	-	0.45	Ph: 3.1 PCB: 0.033	-
23	Soil - 06	20	0.009	-	Ph: 1.37 PAH: 4.535 PCB: 1.20	Pb: 42
24	Soil - 09	40	0.58	173	Ph: 3.7 PAH: 10.6 PCB: 2.1	Pb: 36
25	MW 05	20	7.2	0.9	-	Cd: 0.015 Cr: 0.074 Pb: 0.036
26	Soil - 08	20	0.009	0.006	Ph: 3.13 PAH: 1.7 PCB: 8.5	-

TABLE 3-4 (continued)
 DRUMS CONTAINING SITE INVESTIGATION-GENERATED MATERIALS
 PLANNED FOR OFF-SITE INCINERATION
 NWIRP, CALVERTON, NEW YORK
 Page 2

Drum Number	Sample Location	Quantity (gallons)	C-VOAs (ppm)	NC-VOAs (ppm)	VOAs (ppm)	SVOAs (ppm)	RCRA Metals (ppm)
27	PPE	55			*	*	*
30	PPE	55			*	*	*
31	PPE	55			*	*	*
32	PPE	55			*	*	*

C-VOAs: chlorinated volatile organic compounds, which include: 1,2-dichloroethene, tetrachloroethene, trichloroethene, 1,2-dichloroethane, 1,1,1-trichloroethane, chloroethane, and 1,2-dichlorobenzene.
 NC-VOAs: non-chlorinated volatile organic compounds, which include: acetone, benzene, ethylbenzene, 2-methylnaphthalene, naphthalene, toluene, xylene, and benzoic acid.
 VOAs: volatile organic compounds which include C-VOAs and NC-VOAs.
 SVOAs: semi-volatile organic compounds.
 PAH: polyaromatic hydrocarbons.
 Ph: phthalates.
 PCB: polychlorinated biphenyls.
 RCRA: Resource Conservation and Recovery Act.
 Cd: cadmium.
 Cr: chromium.
 Pb: lead.
 PPE: personal protective equipment.
 +: several other non-RCRA regulated, but toxic metals were detected.
 *: volatile and semi-volatile organic compounds, and metals are suspected.
 -: contaminants were not detected, or not analyzed and believed to be absent.
 ppm: parts per million: mg/l for liquids and mg/kg for solids.
 MW: monitoring well.

TABLE 3-5

**DRUM CONSOLIDATION FOR OFF-SITE TREATMENT AND DISPOSAL
NWIRP, CALVERTON, NEW YORK**

Drum Number	Contents	Site	Quantity (gallons)	Consolidate into Drum Number
06	Water	2	50	
11	Soil	1	20	
12	Soil	1	20	11
17	Soil	6A	40	
20	Soil	2	27	
21	Water	2	20	25
22	Soil	2	27	
23	Soil	2	20	17 and 22
24	Soil	2	40	
25	Water	2	20	
26	Soil	2	20	22 and 24
27	PPE	2	55	
30	PPE	2	55	
31	PPE	2	55	
32	PPE	2	55	
Decon fluid	Liquid	2	5	25
Decon equipment	Solid	2	5	20